

Work Order ID 51939

Wednesday, September 09, 2009 3:28:04 PM



Page 1

Item ID: D206-667-203

Accept



Setup Start



Revision ID: C

Item Name: Crosstube Aft

Stop



Start Date: 9/11/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 9/30/2009 Req'd Qty: 1.00

Customer:



Reference:

Approvals:

Process Plan:

Handwritten initials

Date:

09-9-09

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D206-667-243

Rev C

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D206-667-203 CHG003

Handwritten: SEE NCR - PG 3 -

110

0.00



BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D206-667-243 using CNC bender program 206L-AF and Folio FT

Handwritten: TX

Handwritten: MB

Handwritten: 09-10-06

120

QC15- Crosstube Dimensional Check

0.00



QC

Memo

0.00

Quality Control

Handwritten: 2) 8/21/06

Handwritten: 7L

Handwritten: 6

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Page 2

Item ID: D206-667-203

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Setup Start



Revision ID: C

Stop



Item Name: Crosstube Aft

Start Date: 9/11/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 9/30/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 	Crosstubes	0.00							
Crosstubes	Memo	0.00							
Crosstubes	1-Drill pilot holes in tube using drill Jig DT8583 & DT8584 as per Dwg D206-667-243. 2-Drill and Ream all holes in tube to finish size using drill Jig DT8583 & DT8584 as per Dwg D206-667-243 Check dimensions between holes on all								
140 	Crosstubes Chemical Conversion	0.00							
HandFXtube	Memo	0.00							
Hand Finishing Crosstubes									
150 	QC3- Inspect Part Finish	0.00							
QC	Memo	0.00							
Quality Control									

(ix)

SEE NCR
-OVER-

MB 0910-07

Pro

1 ~~Ø~~ - 4MW 9-10-07

(H)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D206-667-203 PAR #: _____ Fault Category: x-tubes NCR: (Yes) No DQA: / Date: 05.10.20
 Resolution: documentation revised Disposition: re-work QA: N/C Closed: / Date: 05.10.20

NCR: <u>51939</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
05.10.07	130	DRILL PASSED THROUGH CUFF, PUT MARK ON INNER DIAMETER RC: LOA.	CP 05.10.07 per QSI 042	DRILL ADDITIONAL HOLES TO MATCH OPPOSITE SIDE OF CUFF. REF. DSI 9346 Rev. G	NB 09-10-08	S 05/10/06	CP 05.10.07 per QSI 042	S 05/10/06
05.10.07	100	PAPERWORK BLUEFILE NEEDS UPDATING TO ACCOUNT FOR ADDITIONAL HOLES RC: LOA. (from above NCR)	CP 05.10.07 per QSI 042	ADD DSI 9346 Rev. #1 TO PAPERWORK. GET FROM ENG (CP)	←	S 05/10/16	CP 05.10.07 per QSI 042	← 05/10/16

NOTE: Date & initial all entries

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Item ID: D206-667-203

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Start Date: 9/11/2009 Start Qty: 1.00

Cust Item ID:

Required Date: 9/30/2009 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

160

QC5- Inspect part completeness to step on W/O

0.00

2) 502/10/09

QC

Memo

0.00

Quality Control

170

Outsource process - NDT per QSI038 4.1

0.00

Outsource2

Memo

0.00

Outsource process - NDT

Liquid Penetrant Inspection as per QSI 038 Or ☐ Issue P/O: 10557 ☐ LPI as per ASTM 1417 ☐ Level 2 Attach copy of NDT results to work order

180

Packaging

0.00

Packaging

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

C2 09/10/09 ①

Peg/10/09 ①

Work Order ID 51939

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Revision ID: C

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Start Date: 9/11/2009 Start Qty: 1.00

Required Date: 9/30/2009 Req'd Qty: 1.00

Reference:

Cust Item ID:






Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190  QC Quality Control	QC5- Inspect part completeness to step on W/O Memo Ensure results are as per Dwg D206-667-243	0.00 0.00					09	10	13 ①
200  SprayPaint Spray Painting	SprayPaint Memo 1-Prime inside and outside crosstube as per QSI 005 4.2 2-Paint outside crosstube with White Imron as per QSI 005 4.2 <input type="checkbox"/> PRIME: <input type="checkbox"/> Start Time: 9:45 <input type="checkbox"/> Finish Time: 10:30 <input type="checkbox"/> PAINT: <input type="checkbox"/> Start Time: 10:30 <input type="checkbox"/> Finish Time: 3:30	0.00 0.00					09	10	13 ①
210  QC Quality Control	QC14- Inspect Spray Paint Memo Wrap in plastic bag to protect from scratches	0.00 0.00				RT	09	10-14	

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Item ID: D206-667-203

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Setup Start



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Stop



Item Name: Crosstube Aft

Start Date: 9/11/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 9/30/2009 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

250

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

CC/15 (1)

260

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

POSITIVE RECALL

EFFECTIVE *CP*

AUTH *09.10.07*

RELEASED *09.10.15*

DATE *CP*

NEED DS) FROM ENG.

09.10.16

270

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D206-667
203 ☐ Location: _____ ☐ PPP Rev: *D*

09/16 (1)

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Item ID: D206-667-203

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Aft

Start Date: 9/11/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 9/30/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/10/20 [Signature]

PP 09-10-20

Picklist Print

Page 1

Wednesday, September 09, 2009 3:28:10 PM

Work Order ID: 51939



Parent Item: D206-667-203RevC



Parent Item Name: Crosstube Aft

Start Date: 9/11/2009

Required Date: 9/30/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

AN960JD516

Purchased

No

100

Each

1,202.000

18.0000



Washer



M112794 P09/10/50

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

1202

100564

2

106167

6

107534

34

107959

43

108246

46

108672

2

109059

49

109752

22

110363

46

110523

57

111279

43

112082

352

112314

500

D206-667-

Manufactured

No

203TRNRevC

220

Each

2.0000

1.0000



Crosstube Turning Detail



B-52463 MS 09-10-05

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

FG

2

45623

1

45625

1

B-

Picklist Print

Page 2

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Parent Item: D206-667-203RevC



Parent Item Name: Crosstube Aft

Start Date: 9/11/2009

Required Date: 9/30/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2873-043RevA		Manufactured	No			220	Each	53.0000	2.0000			
Nut Plate Assembly												

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	53	
45370	18	
45422	15	
50002	20	

ml 09 10 15

D2873-045RevA		Manufactured	No			220	Each	71.0000	2.0000			
Nut Plate Assembly												

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	71	
45210	11	
46772	20	
50001	40	

ml 09 10 15

Picklist Print

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Work Order ID: 51939



Parent Item: D206-667-203RevC



Parent Item Name: Crosstube Aft


Start Date: 9/11/2009

Required Date: 9/30/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2892-1RevA		Manufactured	No			230	Each	48.0000	2.0000			
												
Support												

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	48	
35581	4	
41986	20	
42785	20	
45936	4	


ml 091014

D3595-063-450RevA Manufactured No



RUBBER CUSHION

230 Each 81.1789 4.0000



<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
LG	74	
50953	74	
Main Warehouse		
ST	7.1789	
38959	2	
43210	4.8	
46465	0.3789	

ml 091014

Picklist Print

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Parent Item: D206-667-203RevC



Parent Item Name: Crosstube Aft

Start Date: 9/11/2009

Required Date: 9/30/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MS20601-AD4W10		Purchased	No			230	Each	241.0000	14.0000			
RIVET												

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

241

110665

100

111177

141

?
ML 09 10 15

AN5-10A

Purchased

No

260

Each

150.0000

10.0000



Bolt

✓
PC 9/10/10 ①

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

150

107013

8

110363

2

111425

2

111819

38

112314

50

112385

50

ML 11/18/19

Picklist Print

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Work Order ID: 51939



Parent Item: D206-667-203RevC



Parent Item Name: Crosstube Aft

Start Date: 9/11/2009

Required Date: 9/30/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN5-32A 		Purchased	No			260	Each	79.0000	4.0000	✓		
Bolt												

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	79	
106242	3	
106519	4	
110363	17	
111916	5	
112082	50	

111916 1x
1112082 3x

AN5-34A



Bolt

Purchased

No

260

Each

50.0000

4.0000



Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	50	
104679	2	
105408	1	
107013	2	
111425	45	

111425

9/10/10

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Shop Packet Print

Page 5

Picklist Print

Page 6

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Work Order ID: 51939

Parent Item: D206-667-203RevC

Parent Item Name: Crosstube Aft


Comments:

Start Date: 9/11/2009

Required Date: 9/30/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MS21042L5  Nut		Purchased	No			260	Each	1,311.000	4.0000			

Handwritten signature

Warehouse
Location

Loc Qty

Loc Code

Main Warehouse

ST

1311

110382

10

111636

301

112314

1000

m111636
m112314

MS21920-22

Purchased

No

260

Each

114.0000

4.0000



Clamp(per MIL-DTL-8783C)

Warehouse
Location

Loc Qty

Loc Code

Main Warehouse

ST

114

109495

14

110260

50

111210

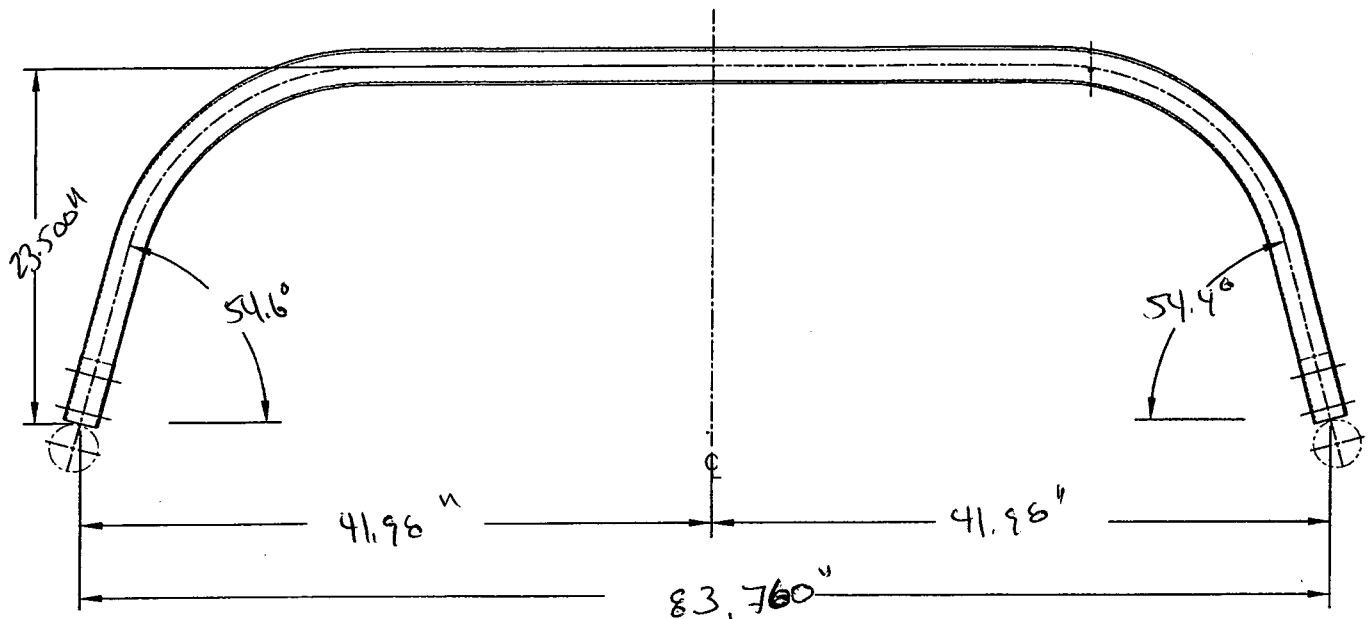
50

m 09 10 14

DART AEROSPACE LTD		Work Order:	51939
Description: Crosstube High Aft (206L)		Part Number:	D206-667-203
Inspection Dwg: D206-667-243	Rev: B C	Page 1 of 1	

09.09.21

Required Dimension	Min	Max
Height	23.46	23.58
1/2 Span	41.86	41.98
Angle	54	56
Total Span	83.72	83.96



Comments

QC15 Inspection	8
Date	09/10/06

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Disposition: _____ QA: N/C Closed: _____ Date: _____

WORK ORDER NON-CONFORMANCE (NCR)								
DATE	STEP	Description of NC	Corrective Action			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Item	Qty	Part Number	Description
	-243		
1	X	D206-667-243	CROSSTUBE ASSEMBLY (206L HIGH AFT)
2	1	D6004-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2892-1	SUPPORT
6	4	D3595-063-450	RUBBER CUSHION
7	4	MS21920-22	CLAMP
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 51939

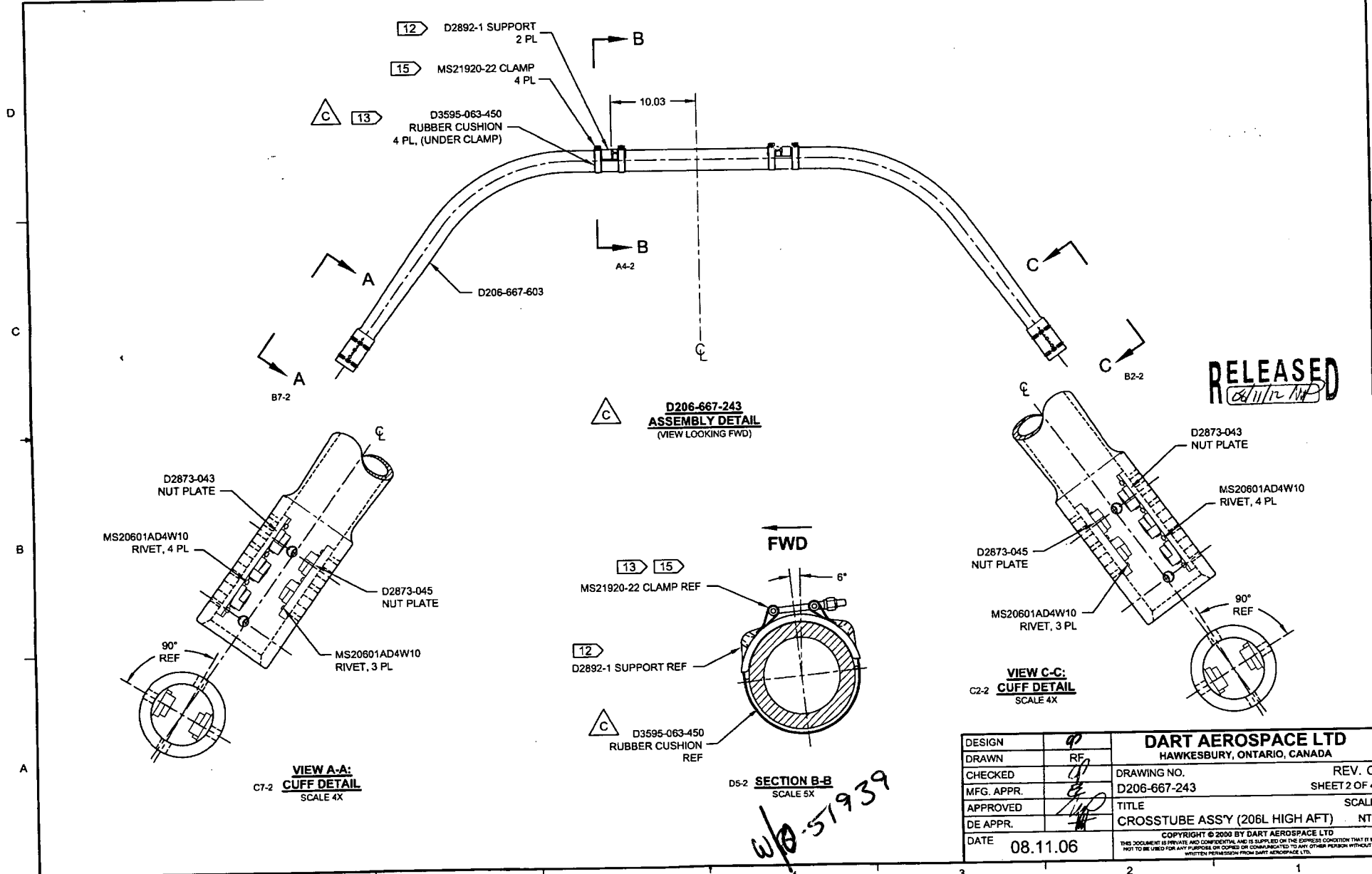
GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6004-115
FINISHED LENGTH = 104.91±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-243" AND BATCH NUMBER ON
INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 21.9 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY.
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2892-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER
QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-22 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE
D2892-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE
LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

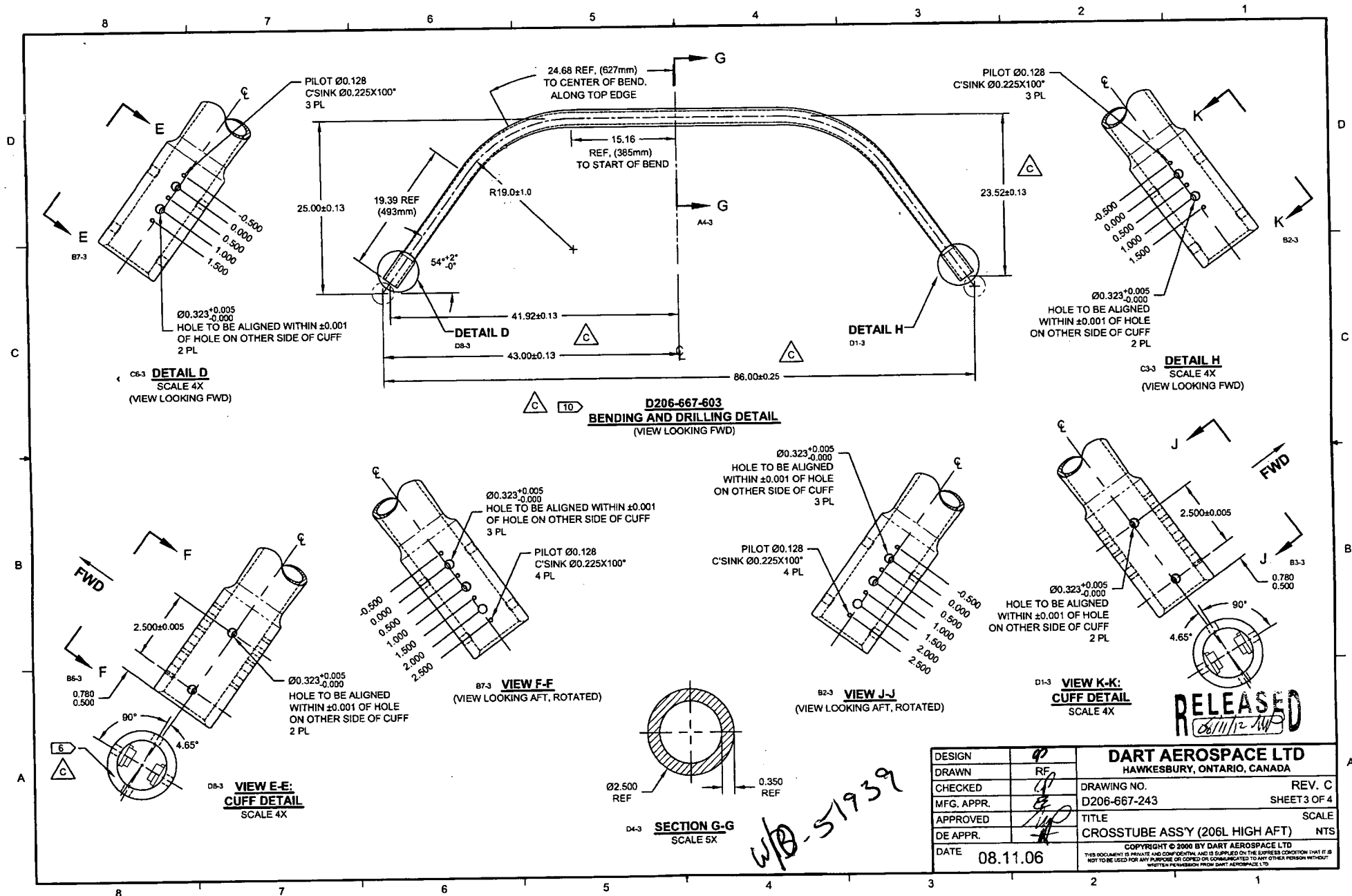
RELEASED
08/11/06

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-450 WAS D2856-400-773 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCES (ZN 4-3, C5-3, D3-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	<u>RF</u>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	<u>RF</u>	DRAWING NO. REV. C	
CHECKED	<u>RF</u>	D206-667-243 SHEET 1 OF 4	
MFG. APPR.	<u>RF</u>	TITLE SCALE	
APPROVED	<u>RF</u>	CROSSTUBE ASS'Y (206L HIGH AFT) NTS	
DE APPR.	<u>RF</u>	COPYRIGHT © 2000 BY DART AEROSPACE LTD	
DATE	08.11.06	THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMBINED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

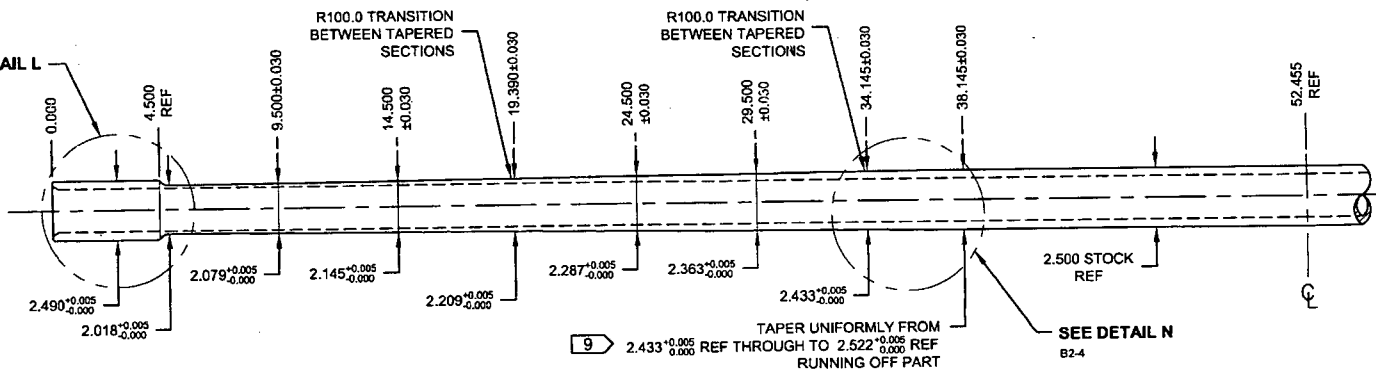
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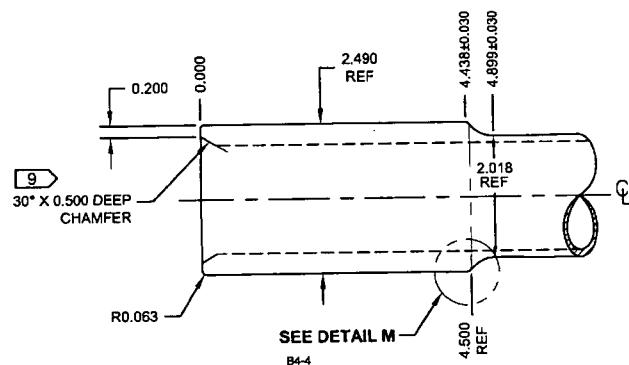
W/0-51939



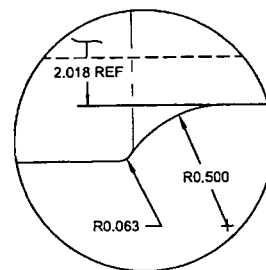
SEE DETAIL L
B7-4



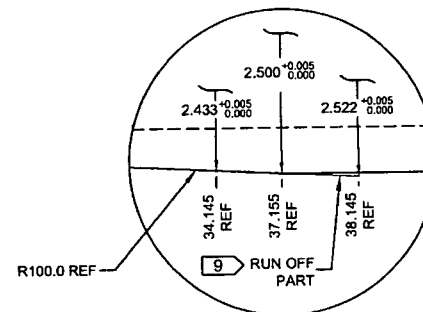
TURNING DETAIL



DETAIL L: CROSSTUBE CUFF
NOT TO SCALE



DETAIL M: CUFF TRANSITION
NOT TO SCALE



DETAIL N: TAPER RUN-OFF
NOT TO SCALE

RELEASED
08/11/06

DESIGN	9	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D206-667-243	SHEET 4 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASSY (206L HIGH AFT)	NTS
DATE	08.11.06	COPYRIGHT © 2006 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			

W/ 51939

5.0 PARTS LIST

Item	Qty -011	Qty -013	Qty -015	Qty -101	Qty -201	Qty -103	Qty -203	Qty -105	Qty -205	Part Number	Description
	X									D206-667-011	SPACER BLOCK KIT
		X								D206-667-013	NUT PLATE KIT (-101/-103/-105/-203/-205)
			X							D206-667-015	NUT PLATE KIT (-201)
				X						D206-667-101	CROSSTUBE INSTALLATION, 206A/B HIGH FWD
					X					D206-667-201	CROSSTUBE INSTALLATION, 206A/B HIGH AFT
						X				D206-667-103	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH FWD
							X			D206-667-203	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH AFT
								X		D407-667-105	CROSSTUBE INSTALLATION, 407 HIGH FWD
									X	D407-667-205	CROSSTUBE INSTALLATION, 407 HIGH AFT
1				1						D206-667-141	CROSSTUBE ASSEMBLY, 206A/B HIGH FWD
2					1					D206-667-241	CROSSTUBE ASSEMBLY, 206A/B HIGH AFT
3						1				D206-667-143	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH FWD
4							1			D206-667-243	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH AFT
5								1		D407-667-145	CROSSTUBE ASSEMBLY, 407 HIGH FWD
6									1	D407-667-245	CROSSTUBE ASSEMBLY, 407 HIGH AFT
10				*2	*2	*2		*2		D2891-1	SUPPORT
11							*2			D2892-1	SUPPORT
12									*1	D2894-1	SUPPORT
13				*2	*2	*2		*2		D2856-400-694	ABRASION STRIP
14							*2		*2	D2856-400-773	ABRASION STRIP
15									*1	D2856-600-851	ABRASION STRIP
16				*4	*4	*4		*4		MS21920-20	CLAMP
17							*4		*4	MS21920-22	CLAMP
18									*2	MS21920-24	CLAMP
19				4	4	4		4		AN5-32A	BOLT
20							4	4	4	AN5-34A ✓	BOLT
21				4	4	4	4	4	4	MS21042L5 ✓	NUT (OR MS21042-5)
22				8	8	8	8	8	8	AN960JD516 ✓	WASHER
23									*2	D3190-1	CHAFING SHIELD
30	8									AN4-6A	BOLT
31	8									AN4-7A	BOLT
32	16									AN960JD416	WASHER
33	2									D3193-041	SPACER BLOCK ASSEMBLY
40		2		*2		*2	*2	*2	*2	D2873-043	NUT PLATE
41		2		*2		*2	*2	*2	*2	D2873-045	NUT PLATE
42			2		2					D2872-043	NUT PLATE
43			2		2					D2872-045	NUT PLATE
44		10		10		10				AN5-7A	BOLT
45		10	10		10		10	10	10	AN5-10A ✓	BOLT
46		4	4	4	10	4		4		AN5-30A	BOLT
47		4					4	4	4	AN5-32A ✓	BOLT
48		18	18	10	12	10	10	10	10	AN960JD516 ✓	WASHER
49		4	4		6					MS21042L5	NUT (OR MS21042-5)

*REFERENCE ONLY. PARTS ARE INCLUDED IN D206-667-141/241/143/243, & D407-667-145/245 ASSEMBLIES ABOVE

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Revision: C

Date: 05.07.26

57939

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D206-667 REV. C

REF. CANADIAN STC: SH01-5

REF. FAA STC: SR01304NY

REFERENCE ONLY

THE FOLLOWING D206-667-101/-103/-203 AND D407-667-105 CROSSTUBES HAVE EXTRA HOLES DRILLED ON THE AFT SIDE OF THE CUFFS. THIS HOLE IS NOT REQUIRED FOR INSTALLATION OF DART CROSSTUBES ONTO BHT/AAI SKIDTUBES AS SHOWN IN FIGURE 1.

CUSTOMERS RECEIVING CROSSTUBES AT CHG 002 PRIOR TO 06.08.08 SHOULD CONTACT DART FOR DISPOSITION IF INSTALLING THE DART CROSSTUBES ONTO BHT/AAI SKIDTUBES PER IIN-D206-667 REV. C.

CUSTOMERS RECEIVING CROSSTUBES AT CHG 002 PRIOR TO 06.08.08 TO BE INSTALLED WITH DART SKIDTUBES MAY FIND THAT THE SUPPORTS HAVE BEEN INSTALLED BACKWARDS. THE SUPPORTS SHOULD BE REMOVED AND RE-INSTALLED PER ICA-D206-667.

PART NO.	CHANGE NUMBER	BATCH NO
D206-667-101	002	B24244, B28679, B29261
D206-667-103	002	B26702, B26704, B27980, B25606, B25605, B23220, B23219, B23218, B23217, B28682, B28683, B32664, B34139, B36053
D206-667-203	002	B27492, B27491, B27981, B25609, B25608, B25006, B24646, B34144, B36059, B51939, B51940
D407-667-105	002	B31553

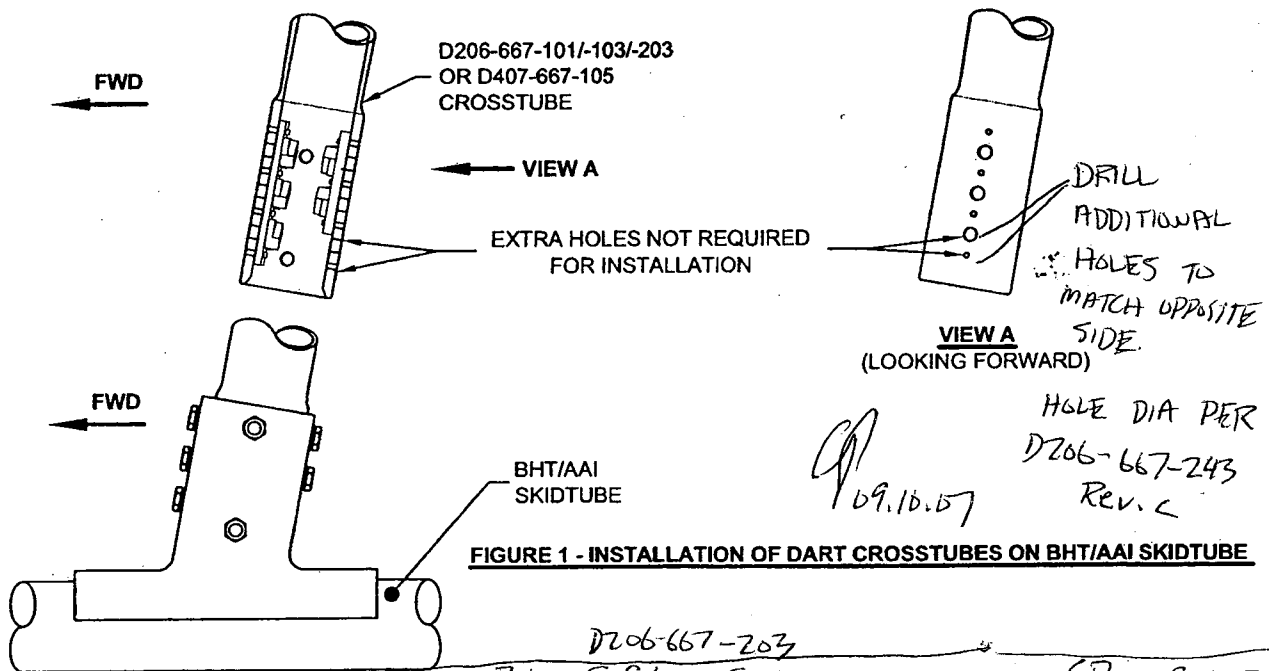


FIGURE 1 - INSTALLATION OF DART CROSSTUBES ON BHT/AAI SKIDTUBE

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED
BY: *[Signature]*
D. SHEPHERD (DE # 02)

DATE: 08.01.17
CERT. NO.: SH01-5
ISSUE NO.: 3

H	B/N: S1940, S1939	CP	09.10.07
G	ADD B36053, B36059	PH	08.01.17
F	ADD B34139, B34144	MB	07.10.22
E	ADD D407-667-105 & B31553	MB	07.08.14
D	ADD B32664	MB	07.07.24
C	ADD B29261	MB	06.11.20
B	ADD B28679, B28682, B28683	PH	06.10.10
A	NEW ISSUE	PH	06.08.08
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	PH		
CHECKED	UE	DRAWING NO.	REV. G
MFG. APPR.	N/A	DSI 9346	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	DEVIATION ON D206-667 & D407-667	NTS
DATE	08.01.17	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS: IIN-D206-667 REV. C
REF. CANADIAN STC: SH01-5
REF. FAA STC: SR01304NY

THE FOLLOWING D206-667-101/-103/-203 AND D407-667-105 CROSSTUBES HAVE EXTRA HOLES DRILLED ON THE AFT SIDE OF THE CUFFS. THIS HOLE IS NOT REQUIRED FOR INSTALLATION OF DART CROSSTUBES ONTO BHT/AAI SKIDTUBES AS SHOWN IN FIGURE 1.

CUSTOMERS RECEIVING CROSSTUBES AT CHG 002 PRIOR TO 06.08.08 SHOULD CONTACT DART FOR DISPOSITION IF INSTALLING THE DART CROSSTUBES ONTO BHT/AAI SKIDTUBES PER IIN-D206-667 REV. C.

CUSTOMERS RECEIVING CROSSTUBES AT CHG 002 PRIOR TO 06.08.08 TO BE INSTALLED WITH DART SKIDTUBES MAY FIND THAT THE SUPPORTS HAVE BEEN INSTALLED BACKWARDS. THE SUPPORTS SHOULD BE REMOVED AND RE-INSTALLED PER ICA-D206-667.

PART NUMBER	CHANGE NUMBER	BATCH NUMBER
D206-667-101	002	B24244, B28679, B29261
D206-667-103	002	B26702, B26704, B27980, B25606, B25605, B23220, B23219, B23218, B23217, B28682, B28683, B32644, B34139, B36053
D206-667-203	002	B27492, B27491, B27981, B25609, B25608, B25006, B24646, B34144, B36059
D206-667-203	003	B39852, B51939, B51940
D407-667-105	002	B31553
D407-667-105	003	B39271







51939

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED

BY: 
D. SHEPHERD (DE # 02)

DATE: 09.10.08
CERT. NO.: SH01-5
ISSUE NO.: 3

I	ADD B51939, B51940	CP	09.10.08
H	ADD B39271, B39852	PH	08.06.16
G	ADD B36053, B36059	PH	08.01.17
F	ADD B34139, B34144	MB	07.10.22
E	ADD D407-667-105 & B31553	MB	07.08.14
D	ADD B32664	MB	07.07.24
C	ADD B29261	MB	06.11.20
B	ADD B28679, B28682, B28683	PH	06.10.10
A	NEW ISSUE	PH	06.08.08
REV.	DESCRIPTION	BY	DATE
DESIGN		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN			
CHECKED		DRAWING NO.	REV. 1
MFG. APPR.		DSI 9346	SHEET 1 OF 2
APPROVED		TITLE	SCALE
DE APPR.		DEVIATION ON D206-667 & D407-667	NTS
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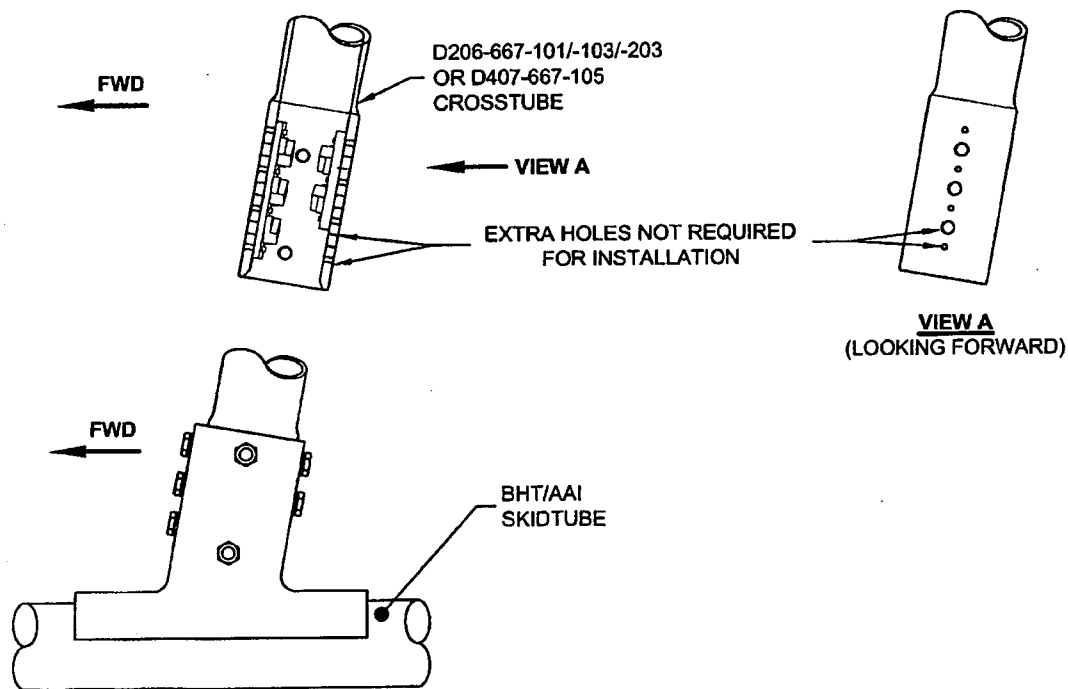


FIGURE 1 - INSTALLATION OF DART CROSSTUBES ON BHT/AAI SKIDTUBE

51939

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED
BY: *[Signature]*
D. SHEPHERD (DE # 02)

DATE: 09.10.08
CERT. NO.: SH01-5
ISSUE NO.: 3

DESIGN	<i>[Signature]</i>	DART AEROSPACE LTD	
DRAWN	<i>[Signature]</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. 1
MFG. APPR.	N/A	DSI 9346	SHEET 2 OF 2
APPROVED	<i>[Signature]</i>	TITLE	SCALE
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LIQUID PENETRANT TEST REPORT

P- 1530

PAGE 1 OF 1

TIME AM ☒ P

CLIENT DART AEROSPACE DATE OCT-8-2009
ATTENTION LINDA/CHANTEL ACUREN JOB NO. 188-08-001567
ADDRESS 1270 46th DEEP ST, HAWKESBURY PO/NO. - 10557
ON. KGH LK7 WORK LOCATION SAME
ACCEPTANCE STD. ASTM 1417 REV./DATE 200
PROJECT F.P.I. on CROSS TUBES AND MACHINED PARTS
ITEM(S) EXAMINED 10 CROSS TUBES
13 MACHINED PARTS

JOB DESCRIPTION PROCEDURE NO. LT- REV./DATE TECHNIQUE NO. LT- REV./DATE
PART NO. STAINLESS STEEL MATERIAL ALUMINUM THICKNESS N/A
SCOPE WET FLUORESCENT LIQUID PENETRANT INSPECTION
CARRIED OUT 100% EXTERNAL

TEST DETAILS
METHOD ☒ FLUORESCENT ☐ VISIBLE ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMUL
FAMILY BRAND MASNA FLUX BLACK LIGHT S/N 16459 ☐ OUTPUT > 1000 μ W/cm² ☐ AMBIENT <
PENETRANT 2L-67 MINIMUM DWELL TIME 45 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ 5
PENETRANT REMOVER H2O MINIMUM DRY TIME >10 MIN. OTHER LABINO
DEVELOPER SKD 52 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N CAL DUE DATE
DEVELOPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY

TEST SURFACE
SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☒ MACHINED ☐ SHOT BLASTED ☐ CLEAN BARE ME
SURFACE TEMPERATURE ☐ < - 4°C/ 20°F ☐ - 4°C/ 20°F TO 10°C/50°F ☒ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F

RESULTS- ☒ METRIC ☐ IMPERIAL

1 - W.O. 51939 - CROSS TUBE X
1 - W.O. 51940 - CROSS TUBE /
1 - W.O. 52054 - CROSS TUBE /
1 - W.O. 52055 - CROSS TUBE /
~~1 - W.O. 51297 - CROSS TUBE~~ /
1 - W.O. 51937 - CROSS TUBE /
1 - W.O. 51938 - CROSS TUBE /
1 - W.O. 52052 - CROSS TUBE /
1 - W.O. 52053 - CROSS TUBE /
1 - W.O. 50982 - CROSS TUBE /
1 - W.O. 50983 - CROSS TUBE /
13 - W.O. 51297 - STUDS /
ALL PARTS EXAMINED. HAVE BEEN FOUND ACCEPTABLE TO STANDARD.
R 10 13

Scope of Services
The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.
Standard of Care
In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES
CLIENT REPRESENTATIVE MATTHEW MURDOCH SIGNATURE Matthew Murdoch DTR # E-27843
TECHNICIAN (SIGNATURE): Mike Johnston SIGNATURE Mike Johnston
NAME (PRINT): Mike Johnston 1st TECHNICIAN 2nd TECHNICIAN
CGSB LEVEL 2 SNT LEVEL 2 CGSB LEVEL 2 SNT LEVEL 2
CGSB REG. NO. 6060 CGSB REG. NO. 6060